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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,840

09/22/2006

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EXAMINER

MUNG, ON

ART UNIT

PAPER NUMBER

2483

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04/11/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,840	Applicant(s) FRENZEL ET AL.	
	Examiner ON MUNG	Art Unit 2483	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 14-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/22/2006 and 10/05/2009</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statements (IDS) were submitted on 09/22/2006 and 10/05/2009. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 14-20, 30, and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nakamura et al. (US Patent 5987174)** (hereinafter Nakamura) in view of **Monji (US20040091133)**.

Regarding claim 14, Nakamura discloses monitoring unit (**Fig. 1**) for an exterior of a motor vehicle in a direction of travel of the motor vehicle (**See abstract; column 1 line 16-20**), which comprises at least one camera system with an image-recording

sensor **[e.g. CCD camera: Fig. 1; column 8 line 42-53]** said sensor having color encoding in partial areas thereof **[See abstract; Fig. 13 (1020); column 3 line 7-14, line 27-55; column 8 line 54-68; column 9 line 1-28]**.

Nakamura teaches monochrome **(e.g. grey or white and black)** which is the part of road surface **[Column 2 line 14-19]**, but Nakamura is silent to teach monochrome encoding in remaining area thereof.

However, Monji from the same or similar fields of endeavor teaches monochrome encoding in remaining area **[CCD for monochrome performs encoding in image processing section: See Fig. 1; paragraph 0026]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura to add sensor that has monochrome coding as taught by Monji in order to perform efficient image processing.

Regarding claims 15 and 16, Nakamura discloses wherein said partial areas with the color encoding are vertical stripes and/or areas on a right-hand and left-hand image edge of said sensor. **[See Fig. 3A, 3B: Left Lane, Right Lane; column 4 line 9-11; column 6 line 41-42]**.

Regarding claim 17, Nakamura discloses wherein said partial areas with the color encoding are selected from the group of vertical stripes, areas on a right-hand image edge of said sensor, and areas on a left-hand image edge of said sensor **[See Fig. 3A, 3B: Left Lane, Right Lane; column 4 line 9-11; column 6 line 41-42]**.

Regarding claim 18, Nakamura discloses wherein said partial areas with the color encoding are horizontal stripes and/or areas on a bottom image edge of said sensor. **[See Fig. 3A, 3B; Fig. 6; screen bottom, horizontal line; column 12 line 63-68; column 13 line 1-6, line 37-43].**

Regarding claim 19, Nakamura teaches wherein said partial areas with the color encoding on the bottom image edge of said sensor are formed to coincide with a view of a camera onto a road directly over an automobile hood. **[See column 3 line 63-65].**

Regarding claim 20, Nakamura discloses the monitoring unit, wherein the color encoding is defined in color-coded stripes and/or areas embodied in a single color **[See Nakamura: Fig. 22A and 22B; column 7 line 29-41].**

Regarding claim 30, Nakamura discloses an assistance system for a motor vehicle, comprising at least one monitoring unit according to claim 14 is disposed to registers an exterior in a travel direction of the motor vehicle **[See column 4 line 23-31].**

Regarding claim 31, Furthermore, Nakamura discloses the assistance system according to claim 30 is configured for traffic-sign and/or traffic-lane registering **[See Fig. 8A and 8B (traffic lane); column 1 line 5-13, line 45-67; column 2 line 1-2].**

5. **Claims 21, 22, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nakamura et al. (US Patent 5987174)** (hereinafter Nakamura) in view of **Monji (US20040091133)**, and further in view of **Itoh (US2001/0052938A1)**.

Regarding claim 21, Nakamura and Monji disclose all the limitations of claim 14 and 20, which are therefore analyzed as previously discussed with respect to those claims.

Nakamura and Monji do not disclose wherein the color encoding is defined in vertical stripes and/or areas with red color encoding.

However, Itoh from the same or similar fields of endeavor teaches wherein the color encoding is defined in vertical stripes and/or areas with red color encoding. **[See Fig. 16 (R-Image); paragraph 0047, 0100, and 0101]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura and Monji to add the red color encoding in sensor system as taught by Itoh in order to perform efficient image coding in image sensor system.

Regarding claim 22, Nakamura and Monji disclose all the limitations of claim 14 and 20, which are therefore analyzed as previously discussed with respect to those claims.

Nakamura and Monji do not disclose the monitoring unit, wherein the color encoding is defined in horizontal stripes and/or areas with yellow color encoding.

However Itoh teaches the color encoding is defined in horizontal areas with yellow color coding **[See Fig. 19; paragraph 0105]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura and Monji to add the horizontal areas with yellow color

Art Unit: 2483

encoding in sensor system as taught by Itoh in order to perform efficient image coding in image sensor system.

Regarding claim 25, Nakamura and Monji disclose all the limitations of claim 14, 20, and 22, which are therefore analyzed as previously discussed with respect to those claims.

Nakamura and Monji do not disclose the monitoring unit, wherein the color encoding includes vertical stripes and/or areas having red and green color encoding.

However, Itoh discloses the color encoding includes vertical areas which have red and green color coding **[See Fig. 20E; paragraph 0105 and 0106]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura and Monji to add the vertical areas with red and green color encoding in sensor system as taught by Itoh in order to perform efficient image coding in image sensor system.

6. Claims 23, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nakamura et al. (US20040091133)** (hereinafter Nakamura) in view of **Monji (US20040091133)**, and further in view of **Zhang (US2002/0039142A1)**.

Regarding claim 23, Nakamura and Monji disclose all the limitations of claim 14, which are therefore analyzed as previously discussed with respect to that claim.

Neither Nakamura nor Monji disclose the monitoring unit, wherein the color encoding is formed in color-coded stripes and/or areas embodied in a combination of two colors.

However, Zhang from the same or similar fields of endeavor teaches wherein the color encoding is formed in color-coded stripes and/or areas embodied in a combination of two colors **[See Fig. 16: R-G and B-G interpolation; paragraph 0022]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura and Monji to add the color encoding with a combination of two colors in sensor system as taught by Zhang in order to perform efficient image coding in image sensor system.

Regarding claim 24, Nakamura and Monji disclose all the limitations of claim 14 and 23, which are therefore analyzed as previously discussed with respect to those claims.

Neither Nakamura nor Monji disclose the monitoring unit, wherein the color encoding includes vertical stripes and/or areas having red and green color encoding.

However, Zhang teaches vertical areas of color encoding with red and green coding **[See Fig. 19; paragraph 0031, 0032]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura and Monji to add the vertical areas of color encoding with red and green coding in sensor system as taught by Zhang in order to perform efficient image coding in image sensor system.

Regarding claim 26, Nakamura and Monji disclose all the limitations of claim 14, which are therefore analyzed as previously discussed with respect to that claim.

Neither Nakamura nor Monji disclose the monitoring unit, wherein the color encoding is defined in a Bayer pattern.

However, Zhang explicitly teaches the color encoding is defined in a Bayer pattern. **[See Fig. 14; paragraph 0007]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura and Monji to add the Bayer pattern in sensor system as taught by Zhang in order to perform efficient image coding in image sensor system.

7. **Claim 27** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nakamura et al. (US20040091133)** (hereinafter Nakamura) in view of **Monji (US20040091133)**, and further in view of **Hashimoto et al. (US5221963)**.

Regarding claim 27, Nakamura and Monji disclose all the limitations of claim 14, which are therefore analyzed as previously discussed with respect to that claim.

Nakamura in view of Monji fails to disclose monitoring unit according to claim 14, wherein a ratio of monochrome coding to partial color encoding is 60:40.

However, Hashimoto et al. from the same or similar fields of endeavor teaches a ratio of monochrome coding to partial color coded area is 40% of sensor area. **[See column 11 line 1-13]**. It would have been obvious to the person of ordinary skill in the

art at the time of the invention to modify the system disclosed by Nakamura and Monji to add a ratio of monochrome coding to partial color encoding in sensor area as taught by Hashimoto et al. in order to produce sufficient a high resolution in image sensor system.

8. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nakamura et al. (US20040091133)** (hereinafter Nakamura) in view of **Monji (US20040091133)**, and further in view of **Pontifex et al. (US2003/0048493A1)**.

Regarding claim 28, Nakamura and Monji disclose all the limitations of claim 14, which are therefore analyzed as previously discussed with respect to that claim.

Nakamura in view of Monji fails to disclose monitoring unit according to claim 14, wherein a ratio of monochrome coding to partial color encoding is 75:25.

However, Pontifex et al. from the same or similar fields of endeavor teaches a beam splitter separates a ratio of monochrome coding (about 70%-80% of image) to partially color-coded area to a ratio between about 20% and 30% of sensor area which cover the ratio of 25% of color coded area. **[See paragraph 0007, 0012]**. . It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura and Monji to add a ratio of monochrome coding to partial color encoding in sensor area as taught by Pontifex et al. in order to produce sufficient a high resolution in image sensor system.

Regarding claim 29, Nakamura and Monji disclose all the limitations of claim 14, which are therefore analyzed as previously discussed with respect to that claim.

Nakamura in view of Monji fails to disclose monitoring unit according to claim 14, wherein a ratio of monochrome coding to partial color encoding is 80:20.

However, Pontifex et al. from the same or similar fields of endeavor explicitly discloses a ratio of monochrome coding to partially color-coded area is 80:20% of the sensor area **[See paragraph 0007, 0012]**. . It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Nakamura and Monji to add a ratio of monochrome coding to partial color encoding in sensor system as taught by Pontifex et al. in order to produce sufficient a high resolution in image sensor system.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please take note of Schofield et al. (US6320176B1), Sato Koichi (JP1997-09035065), and Pallaro et al. (US2004/0141057A1) for their similar Monitoring system.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ON MUNG whose telephone number is (571)270-7557. The examiner can normally be reached on 8am - 5pm.

Art Unit: 2483

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Ustaris can be reached on 571-272-7383. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/OM/

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/Joseph G Ustaris/

Supervisory Patent Examiner, Art Unit 2483